

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (previously presented): An image processing device comprising:
a character recognition unit that recognizes character codes from character images in image data and also detects character recognition certainties, which are respectively degrees of correctly recognizing the character codes;

a conversion unit that converts the character images to character code data according to the character codes; and

a judgment unit that judges whether the character images should be converted to the character code data, wherein said judgment unit judges whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be prohibited from being converted into character code data depending on at least one of the character recognition certainties of said character images contained in the character image group.

Claim 2 (previously presented): An image processing device of claim 1, wherein said judgment unit judges that all character images contained in said character image group should be prohibited from being converted into character code data if the number of character images contained in said character image group, whose character recognition certainties are smaller than a first prescribed value, is larger than a second prescribed value.

Claim 3 (previously presented): An image processing device of claim 1, wherein said judgment unit judges that all character images contained in said character image group should be prohibited from being converted into character code data if the ratio of the number of character images contained in the character image group, whose character recognition certainties are smaller than a first

prescribed value, against the total number of character images contained in said character image group is larger than a second prescribed value.

Claim 4 (previously presented): An image processing device of claim 1, wherein said judgment unit judges that all character images contained in said character image group should be prohibited from being converted into character code data if the average of character recognition certainties of all character images contained in said character image group is smaller than a prescribed value.

Claim 5 (previously presented): An image processing device of claim 1, wherein said judgment unit judges that all character images contained in said character image group should be prohibited from being converted into character code data if the character recognition certainty of at least one of the character images contained in said character image group is smaller than a first prescribed value and said at least one character image is in italics.

Claim 6 (previously presented): An image processing device of claim 5, wherein said judgment unit judges that a character image is in italics if a straight line that passes through an edge of said character image in a direction character images are aligned and is perpendicular to said direction intersects with an adjacent character image.

Claim 7 (previously presented): An image processing device of claim 1, wherein said judgment unit judges that all character images contained in said character image group should be prohibited from being converted into character code data if the character recognition certainty of at least one of the character images contained in said character image group is smaller than a first prescribed value and said at least one character image also forms a pair as an object for kerning with a character image adjacent to said at least one character image.

Claim 8 (previously presented): An image processing device of claim 7, wherein said character image group consists only of multiple character images that

form pairs for kerning.

Claim 9 (previously presented): An image processing device of claim 1, further comprising a character image data forming unit that forms character image data by cutting out from said image data the character images that are prohibited from being converted into character code data by said judgment unit.

Claim 10 (previously presented): An image processing device of claim 1, further comprising a file forming unit to form an electronic file containing character code data generated by said conversion unit.

Claim 11 (previously presented): A program product for image processing in a computer-readable medium, said program product causing a computer to execute a process comprising the steps of:

- 1) recognizing character codes from character images contained in image data;
- 2) detecting character recognition certainties, which are respectively degrees of correctly recognizing the character codes in step 1); and
- 3) judging whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be prohibited from being converted into character code data depending on at least one of the character recognition certainties of said character images contained in the character image group.

Claim 12 (previously presented): A program product of claim 11, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the number of character images contained in said character image group, whose character recognition certainties are smaller than a first prescribed value, is larger than a second prescribed value.

Claim 13 (previously presented): A program product of claim 11, wherein it is

judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the ratio of the number of character images contained in the character image group, whose character recognition certainties are smaller than a first prescribed value, against the total number of character images contained in said character image group is larger than a second prescribed value.

Claim 14 (previously presented): A program product of claim 11, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the average of character recognition certainties of all character images contained in said character image group is smaller than a prescribed value.

Claim 15 (previously presented): A program product of claim 11, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the character recognition certainty of at least one of the character images contained in said character image group is smaller than a first prescribed value and said at least one character image is in italics.

Claim 16 (previously presented): A program product of claim 15, wherein it is judged at said step 3) that a character image is in italics if a straight line that passes through an edge of said character image in a direction character images are aligned and is perpendicular to said direction intersects with an adjacent character image.

Claim 17 (previously presented): A program product of claim 11, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the character recognition certainty of at least one of the character images contained in said character image group is smaller than a first prescribed value and said at least one character image also forms a pair as an object for kerning with a character image adjacent to said at least one character image.

Claim 18 (previously presented): A program product of claim 17, wherein said character image group consists only of multiple character images that form pairs for kerning.

Claim 19 (previously presented): A program product of claim 11, wherein said process further comprising the step of 4) forming character image data by cutting out from said image data the character images that are prohibited from being converted into character code data in said step 3).

Claim 20 (previously presented): A program product of claim 11, wherein said process further comprising the step of 5) forming an electronic file containing character code data converted from said character images.

Claim 21 (previously presented): An image processing method, comprising:

- 1) recognizing character codes from character images contained in image data;
- 2) detecting character recognition certainties, which are respectively degrees of correctly recognizing the character codes in step 1); and
- 3) judging whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be prohibited from being converted into character code data depending on at least one of the character recognition certainties of said character images contained in the character image group.

Claim 22 (previously presented): The method of claim 21, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the number of character images contained in said character image group, whose character recognition certainties are smaller than a first prescribed value, is larger than a second prescribed value.

Claim 23 (previously presented): The method of claim 21, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the ratio of the number of character images contained in the character image group, whose character recognition certainties are smaller than a first prescribed value, against the total number of character images contained in said character image group is larger than a second prescribed value.

Claim 24 (previously presented): The method of claim 21, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the average of character recognition certainties of all character images contained in said character image group is smaller than a prescribed value.

Claim 25 (previously presented): The method of claim 21, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the character recognition certainty of at least one of the character images contained in said character image group is smaller than a first prescribed value and said at least one character image is in italics.

Claim 26 (previously presented): The method of claim 25, wherein it is judged at said step 3) that a character image is in italics if a straight line that passes through an edge of said character image in a direction character images are aligned and is perpendicular to said direction intersects with an adjacent character image.

Claim 27 (previously presented): The method of claim 21, wherein it is judged at said step 3) that all character images contained in said character image group should be prohibited from being converted into character code data if the character recognition certainty of at least one of the character images contained in said character image group is smaller than a first prescribed value and said at least one character image also forms a pair as an object for kerning with a character

image adjacent to said at least one character image.

Claim 28 (previously presented): The method of claim 27, wherein said character image group consists only of multiple character images that form pairs for kerning.

Claim 29 (previously presented): The method of claim 21, wherein said process further comprising the step of 4) forming character image data by cutting out from said image data the character images that are prohibited from being converted into character code data in said step 3).

Claim 30 (previously presented): The method of claim 21, wherein said process further comprising the step of 5) forming an electronic file containing character code data converted from said character images.

Claim 31 (new): An image processing device comprising:
a character recognition unit that recognizes character codes from character images in image data and also detects character recognition certainties, which are respectively degrees of correctly recognizing the character codes;
a conversion unit that converts the character images to character code data according to the character codes; and
a judgment unit that judges whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be at least in a form of image data depending on at least one of the character recognition certainties of said character images contained in the character image group.

Claim 32 (new): The image processing device of claim 31, wherein said judgment unit judges that all character images contained in said character image group should be at least in the form of image data if at least one of the following conditions (1) through (5) is satisfied:

(1) the number of character images contained in said character image group, whose character recognition certainties are smaller than a first prescribed value, is larger than a second prescribed value;

(2) the ratio of the number of character images contained in the character image group, whose character recognition certainties are smaller than a third prescribed value, against the total number of character images contained in said character image group is larger than a fourth prescribed value;

(3) the average of character recognition certainties of all character images contained in said character image group is smaller than a fifth prescribed value;

(4) the character recognition certainty of at least one of the character images contained in said character image group is smaller than a sixth prescribed value and said at least one character image is in italics; and

(5) the character recognition certainty of at least one of the character images contained in said character image group is smaller than a seventh prescribed value and said at least one character image also forms a pair as an object for kerning with a character image adjacent to said at least one character image.

Claim 33 (new): The image processing device of claim 32, wherein, in a case of the condition (4), said judgment unit judges that a character image is in italics if a straight line that passes through an edge of said character image in a direction character images are aligned and is perpendicular to said direction intersects with an adjacent character image.

Claim 34 (new): The image processing device of claim 32, wherein in a case of the condition (5), said character image group consists only of multiple character images that form pairs for kerning.

Claim 35 (new): The image processing device of claim 31, further comprising a character image data forming unit that forms character image data by cutting out from said image data the character images that are judged to be at least in the form of image data by said judgment unit.

Claim 36 (new): The image processing device of claim 31, further comprising a file forming unit to form an electronic file containing character code data generated by said conversion unit.

Claim 37 (new): A program product for image processing in a computer-readable medium, said program product causing a computer to execute a process comprising the steps of:

- (1) recognizing character codes from character images contained in image data;
- (2) detecting character recognition certainties, which are respectively degrees of correctly recognizing the character codes in step 1);
- (3) judging whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be at least in a form of image data depending on at least one of the character recognition certainties of said character images contained in the character image group.

Claim 38 (new): The program product of claim 37, wherein it is judged at said step (3) that all character images contained in said character image group should be at least in the form of image data if at least one of the following conditions (1) through (5) is satisfied:

- (1) the number of character images contained in said character image group, whose character recognition certainties are smaller than a first prescribed value, is larger than a second prescribed value;
- (2) the ratio of the number of character images contained in the character image group, whose character recognition certainties are smaller than a third prescribed value, against the total number of character images contained in said character image group is larger than a fourth prescribed value;
- (3) the average of character recognition certainties of all character images contained in said character image group is smaller than a fifth prescribed value;

(4) the character recognition certainty of at least one of the character images contained in said character image group is smaller than a sixth prescribed value and said at least one character image is in italics; and

(5) the character recognition certainty of at least one of the character images contained in said character image group is smaller than a seventh prescribed value and said at least one character image also forms a pair as an object for kerning with a character image adjacent to said at least one character image.

Claim 39 (new): The program product of claim 38, wherein in a case of the condition (4), it is judged at said step (3) that a character image is in italics if a straight line that passes through an edge of said character image in a direction character images are aligned and is perpendicular to said direction intersects with an adjacent character image.

Claim 40 (new): The program product of claim 38, wherein, in a case of the condition (5), said character image group consists only of multiple character images that form pairs for kerning.

Claim 41 (new): The program product of claim 37, wherein said process further comprising the step of 4) forming character image data by cutting out from said image data the character images that are judged to be at least in the form of image data in said step 3).

Claim 42 (new): The program product of claim 37, wherein said process further comprising the step of 4) forming an electronic file containing code data converted from said character images.

Claim 43 (new): An image processing method, comprising:

1) recognizing character codes from character images contained in image data;

2) detecting character recognition certainties, which are respectively degrees of correctly recognizing the character codes in step 1);

3) judging whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be at least in a form of image data depending on at least one of the character recognition certainties of said character images contained in the character image group.

Claim 44 (new): The method of claim 43, wherein:

it is judged at step 3) that all character images contained in said character image group should be at least in the form of image data if at least one of the following conditions (1) through (5) is satisfied:

(1) the number of character images contained in said character image group, whose character recognition certainties are smaller than a first prescribed value, is larger than a second prescribed value;

(2) the ratio of the number of character images contained in the character image group, whose character recognition certainties are smaller than a third prescribed value, against the total number of character images contained in said character image group is larger than a fourth prescribed value;

(3) the average of character recognition certainties of all character images contained in said character image group is smaller than a fifth prescribed value;

(4) the character recognition certainty of at least one of the character images contained in said character image group is smaller than a sixth prescribed value and said at least one character image is in italics; and

(5) the character recognition certainty of at least one of the character images contained in said character image group is smaller than a seventh prescribed value and said at least one character image also forms a pair as an object for kerning value and said at least one character image also forms a pair as an object for kerning with a character image adjacent to said at least one character image.

Claim 45 (new): The method of claim 44, wherein, in a case of the condition (4), it is judged at said step 3) that a character image is in italics if a straight line that passes through an edge of said character image in a direction character images are

aligned and is perpendicular to said direction intersects with an adjacent character image.

Claim 46 (new): The method of claim 44, wherein, in a case of the condition (5), said character image group consists only of multiple character images that form pairs for kerning.

Claim 47 (new): The method of claim 43, wherein said process further comprising the step of 4) forming character image data by cutting out from said image data the character images that are judged to be at least in the form of image data in said step 3).

Claim 48 (new): The method of claim 43, wherein said process further comprising the step of 4) forming an electronic file containing character code data converted from said character images.